ABSTRACT

A chaotic communication system employs transmitting and receiving chaotic oscillating circuits. One improvement to first-generation systems is the ability to modulate a nonreactive element in the transmitting circuit, thus increasing modulation bandwidth. Other features include insertion of a gain control amplifier in a chaotic receiver; signal filtering in chaotic transmitters and receivers; use of chaotic modulation techniques for cellular telephony applications; dual-transmitter and receiver systems; a dual receiver synchronization detector; interfaces to communication systems; analog chaotic signal modulation; use of multiple chaotic transmitters and receivers; digital algorithm improvement using a cube-law nonlinear component; a Gb-only receiver; a Gb-only transmitter; and positive slope transmitter and receiver systems.